IOP Conference Series: Materials Science and Engineering 2017 vol.240 N1

Simulation of parameters of the vapor-liquid compression cooling system of power machines

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Abstract

© Published under licence by IOP Publishing Ltd. The paper presents a mathematical model of the cooling system with vapor-liquid compression installation modified with an additional allowance for the effect of mass flow rate of ambient air on a heat transfer in the system's heat exchanger-condenser. Also the correction factors considering the difference between the mean log and the mean arithmetic temperature pressure are introduced. The results of numerical simulation showed that the efficiency of the proposed cooling system is 149% and 200% higher than the classical at the ambient temperature plus 10°C and 50°C respectively.

http://dx.doi.org/10.1088/1757-899X/240/1/012031

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